

CLAIMS:

1. An optical scanning device for scanning an information layer of an optical record carrier, the device including:

- a rotary arm (2; 102; 202; 302; 402; 502) which is arranged to swing about a rotation axis (CR) to alter an angular position of the rotary arm about the rotation axis;

5 - a detector arrangement (10) arranged separate from the rotary arm (2; 102; 202; 302; 402; 502) for detecting a radiation beam spot, the radiation beam spot (40; 140; 240; 340; 440; 540) having an angular disposition;

- a first reflective surface (4; 104; 204; 304; 404; 504) attached to the rotary arm (2; 102; 202; 302; 402; 502);

10 - a second reflective surface (6; 106; 206; 306; 406; 506) attached to the rotary arm (2; 102; 302; 402; 502);

- a first light path (LP1; LP101; LP201; LP301; LP401; LP501) running from a location on the record carrier to said first reflective surface;

15 - a second light path (LP2; LP202; LP302; LP402; LP502) running from said first reflective surface to said second reflective surface;

20 - a third light path (LP3; LP103; LP203; LP303; LP403; LP503) running from said second reflective surface to said detector arrangement (10), characterized in that said rotary arm includes at least one optical inversion element (52; 54; 56; 58; 64; 66) arranged such that a dependence between variation of the angular position of the rotary arm and variation of the angular disposition of the radiation beam spot is reduced.

2. An optical scanning device according to claim 1, wherein the angular disposition of the radiation beam spot and the angular position of the rotary arm (2; 102; 202; 302; 402; 502) are substantially independent, after taking into account a variation caused by a change in the direction of data tracks on the optical record carrier across the swing path of the rotary arm.

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3. An optical scanning device according to any of claims 1, 2 or 3, wherein said radiation beam spot comprises regions (46; 48; 146; 148; 446; 448; 546; 548) corresponding to first diffraction orders of said radiation beam for use in a radial tracking function.
- 5 4. An optical scanning device according to any preceding claim, wherein a portion of the third light path (LP3; LP103; LP203; LP303; LP403; LP503) is substantially coincident with the rotation axis (CR).
- 10 5. An optical scanning device according to any preceding claim, wherein the optical inversion element is rigidly fixed to the rotary arm.
6. An optical scanning device according to any preceding claim, wherein the optical inversion element includes only a single reflective surface (52).
- 15 7. An optical scanning device according to any preceding claim, wherein the optical scanning device comprises a further optical inversion element (54), wherein the optical inversion element and said further optical inversion element are separated in a direction parallel to the rotation axis (CR).
- 20 8. An optical scanning device according to any preceding claim, wherein the optical inversion element comprises a prism.
9. An optical scanning device according to claim 8, wherein the prism includes the second reflective surface (406).
- 25 10. An optical scanning device according to claim 9, wherein the prism is an asymmetric prism.
11. An optical scanning device according to any of claims 1 to 7, wherein the
30 optical inversion element comprises a mirror (52; 56; 58; 66).